

IN THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) A method for estimating the position of a receiver receiving code modulated signals from at least one beacon, said method comprising:  
delimiting a region containing said receiver position based on a code modulated signal received at said receiver from at least one beacon and on available information including at least an initial information on said receiver position; and  
estimating said receiver position as a position within said delimited region which minimizes an error criterion,  
wherein said error criterion is at least one of a mean square error of a position within said delimited region, a mean absolute error of a position within said delimited region and a maximum error of a position within said delimited region.
2. CANCEL.
3. (Original) The method according to claim 1, wherein said error criterion takes into account a probability density function indicating the probability density for positions in said delimited region to correspond to said receiver position.
4. (Original) The method according to claim 1, wherein estimating said receiver position comprises covering said delimited region with a grid comprising a plurality of grid points, and determining the receiver position as one of said grid points which minimizes among at least selected ones of said grid points said error criterion.
5. (Original) The method according to claim 4, further comprising:

calculating an assumed time of arrival of code modulated signals from at least two beacons at each of said grid points based on the time of transmission of said code modulated signals and the time of flight of said code modulated signals to said grid points;

comparing the differences between said calculated times of arrival with a threshold value; and

excluding those grid points for which said differences exceed said threshold value before determining said grid point which minimizes among remaining grid points said error criterion.

6. (Original) The method according to claim 4, further comprising excluding certain grid points based on known conditions before determining said grid point which minimizes among remaining grid points said error criterion.
7. (Original) The method according to claim 1, comprising, in case a time available at said receiver is not accurate but a maximum deviation of said available time from an accurate time is known, determining sub-regions based on a code modulated signal received from at least one beacon of said available time for different possible times within said maximum deviation, and delimiting said region containing said receiver position based on a combination of said sub-regions and on available information including at least an initial information on said receiver position.
8. (Currently Amended) A receiver comprising for an estimation of the position of said receiver:
  - a receiving portion for receiving a code modulated signal from beacons; and
  - a processing portion for delimiting a region containing said receiver position based on a code modulated signal received by said receiving portion from at least one beacon

and on available information including at least an initial information on said receiver position, and for estimating said receiver position as a position within said delimited region which minimizes an error criterion,

wherein said error criterion is at least one of a mean square error of a position within said delimited region, a mean absolute error of a position within said delimited region and a maximum error of a position within said delimited region.

9. (Currently Amended) A system for estimating the position of a receiver receiving code modulated signals from at least one beacon, said system comprising:

said receiver, which includes a receiving portion for receiving code modulated signals from beacons; and

a device with a processing portion for delimiting a region containing said receiver position based on a code modulated signal received by said receiving portion from at least one beacon and on available information including at least an initial information on said receiver position, and for estimating said receiver position as a position within said delimited region which minimizes an error criterion,

wherein said error criterion is at least one of a mean square error of a position within said delimited region, a mean absolute error of a position within said delimited region and a maximum error of a position within said delimited region.

10. (Original) The system according to claim 9, wherein said device is combined with said receiver.

11. (Original) The system according to claim 10, further comprising a mobile communication network, wherein said device is a mobile terminal adapted to communicate with said mobile communication network.

12. (Original) The system according to claim 9, wherein said receiver is combined with a mobile terminal and wherein said device is a network element of a mobile communication network, said mobile terminal being adapted to communicate with said mobile communication network.
13. (Currently Amended) A software program product in which a software code for estimating the position of a receiver receiving code modulated signals from at least one beacon is stored, said software code realizing the following steps when running in a processing unit:
  - delimiting a region containing said receiver position based on a code modulated signal received at said receiver from at least one beacon and on available information including at least an initial information on said receiver position; and
  - estimating said receiver position as a position within said delimited region which minimizes an error criterion,
  - wherein said error criterion is at least one of a mean square error of a position within said delimited region, a mean absolute error of a position within said delimited region and a maximum error of a position within said delimited region.